

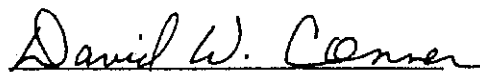
FEASIBILITY STUDY

NC 101 Relocation
at Beaufort-Morehead City Airport
Carteret County

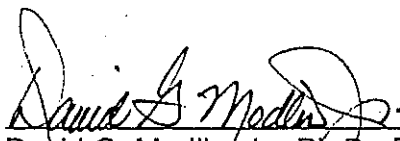
R-3624

Division 2

Prepared by
Program Development Branch
Division of Highways
N. C. Department of Transportation



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Date

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I. General Description of Alternates

This is a feasibility study describing three alternates for relocating a segment of NC 101 in the area of the Beaufort-Morehead City Airport to allow extension of Runway 25. The location of the study area and each of the alternates is depicted on the attached Figure 1. The studied alternates are described below.

Alternate 1

1. Construction, on new location, of a new 5-lane, 68-foot (20.7-m) wide (face-to-face), curb-and-gutter section, with 10-foot (3.0-m) wide berms, from immediately south of Carteret Memorial Gardens, to NC 101 at approximately 600 feet (182.9 m) north of SR 1170 (Beaufort Road) then along existing NC 101 to SR 1170, then on new location to US 70. A right-of-way width of 100 feet (30.5 m) is suggested. This roadway segment will have a length of approximately 1.7 miles (2.7 km).
2. Construct a new connector from the relocated NC 101 to US 70 at Wellons Drive. The connector should be a 2-lane, 28-foot (8.5-m) wide curb-and-gutter section, with 10-foot (3.0-m) wide berms on a 60-foot (18.3-m) wide right-of-way. This segment of roadway will have a length of approximately 0.5 miles (0.8 km).

It is estimated that there will be 5 residences and 1 business relocated as a result of this alternate.

The total cost of right-of-way and construction of Alternate 1 is estimated to be \$8,300,000 as follows:

Right-of-way	\$2,400,000
Construction	5,900,000

Total Cost	\$8,300,000

Alternate 2

Alternate 2 is identical to Alternate 1 with the exception of the alignment of the connector from the relocated NC 101 to US 70 which will connect to existing US 70 via Campen Road in lieu of connecting at Wellons Drive. The connector along Campen Road will have a length of approximately 0.5 miles (0.8 km) and will include some construction on new location and the widening of existing Campen Road from a 2-lane shoulder section to a 28-foot (8.5-m) wide, face-to-face, curb-and-gutter section.

It is estimated that there will be 5 residences and 1 business relocated as a result of this alternate.

The total cost of right-of-way and construction of Alternate 2 is estimated to be \$8,100,000 as follows:

Right-of-way	\$2,300,000
Construction	5,800,000

Total Cost	\$8,100,000

Alternate 3

1. Construction, on new location, of a new 5-lane, 68-foot (20.7-m) wide (face-to-face), curb-and-gutter section, with 10-foot (3.0-m) wide berms, from immediately south of Carteret Memorial Gardens, to US 70 at approximately 0.2 miles (0.3 km) northeast of SR 1303. A right-of-way width of 100 feet (30.5 m) is suggested. This roadway segment will have a length of approximately 1.3 miles (2.1 km). A minimum distance of 1,000 feet (305.0 km) should be maintained between the R-3307 and R-3624 intersections with US 70.
2. Construct a new connector from the relocated NC 101 to SR 1212 (Airport Road). The connector should be a 2-lane, 28-foot (8.5-m) wide curb-and-gutter section, with 10-foot (3.0-m) wide berms on a 60-foot (18.3-m) wide right-of-way. This segment of roadway will have a length of approximately 0.7 miles (1.1 km).

It is estimated that there will be 6 residences and 1 business relocated as a result of this alternate.

The total cost of right-of-way and construction of Alternate 3 is estimated to be \$6,600,000 as follows:

Right-of-way	\$1,650,000
Construction	4,950,000

Total Cost	\$6,600,000

This study is the initial step in the planning and design process for this project and is not to be considered the product of exhaustive environmental or design investigations. The purpose of the study is to describe the problem, recommend a treatment including costs, and identify potential problem areas that deserve consideration in the planning and design phases.

II. Existing Conditions

The purpose of this project is to relocate a section of NC 101 to allow for the extension of Runway 25 at the Beaufort-Morehead City Airport and to provide improved access to US 70 from north of Beaufort.

NC 101 is designated a major thoroughfare on the Morehead City Thoroughfare Plan and a major collector on the North Carolina Statewide Functional Classification System.

Existing NC 101 is generally a 2-lane rural shoulder section with a 22-foot (6.7-m) wide pavement. It is developed with dense commercial development around the US 70 intersection and a mix of light commercial and residential from SR 1299 (Carraway Drive) to the north project terminal. The Beaufort-Morehead City Airport is located immediately west of NC 101 at SR 1212 (Airport Road).

Existing Campen Road is a 2-lane rural shoulder section with a 20-foot (6.1-m) wide pavement. It is completely developed on both sides with single family residences that are set back from the existing roadway approximately 60 feet (18.3 m). Campen Road is signalized at the US 70 intersection, on the south end, and runs adjacent to Carteret Middle School on the north end.

Airport Road is a 2-lane shoulder section with an 18-foot (5.5-m) wide pavement. It is the main entrance to the Beaufort-Morehead City Airport.

Within the project terminals, the 1995 Average Daily Traffic (ADT) on NC 101 is approximately 5,600 vehicles per day (vpd). The estimated design year (2020) volumes, on the relocated NC 101, are 13,200 vpd for Alternates 1 and 2 and 13,900 vpd for Alternate 3.

The Level Of Service (LOS), on NC 101, is currently estimated to be a level D. With construction of either of the studied alternates, the LOS is expected to improve to a Level A which should prevail through the design year (2020). Without improvements it is estimated that a Level E will be reached prior to the design year.

During the period from March 1, 1993, through February 29, 1996, there were 14 accidents reported on NC 101 between the project terminals. This resulted in an accident rate of 121.8 accidents per 100 million vehicle miles (Acc/100 MVM), compared to a statewide average of 317 Acc/100 MVM for all urban NC routes during 1994. One of the accidents resulted in a fatality and 14 other accidents resulted in injuries. The most prevalent accident types were rear-end (31.6%) and left-turn (15.8%). The wider cross section with center turn lane will reduce the potential for these types of accidents.

III. Detailed Description of Alternates

Three alternates were studied for relocation of a segment of NC 101 around the proposed extension of Runway 25 at the Beaufort-Morehead City Airport. The location of the alternates are depicted on the attached Figure 1 and a detailed description of the alternates is as follows:

Alternate 1

1. Construction, on new location, of a new 5-lane, 68-foot (20.7-m) wide (face-to-face), curb-and-gutter section, with 10-foot (3.0-m) wide berms, from immediately south of Carteret Memorial Gardens, to NC 101 at approximately 600 feet (182.9 m) north of SR 1170 (Beaufort Road) then along existing NC 101 to SR 1170, then on new location to US 70. A right-of-way width of 100 feet (30.5 m) is suggested. This roadway segment will have a length of approximately 1.7 miles (2.7 km).
2. Construct a new connector from the relocated NC 101 to US 70 at Wellons Drive. The connector should be a 2-lane, 28-foot (8.5-m) wide curb-and-gutter section, with 10-foot (3.0-m) wide berms on a 60-foot (18.3-m) wide right-of-way. The easternmost 300 feet (91.5 m) of the section should be widened to three lanes to facilitate turning

movements at US 70. This segment of roadway will have a length of approximately 0.5 miles (0.8 km).

3. Construct four new cul-de-sacs on existing NC 101 located (a) immediately north and south of the proposed runway extension, (b) immediately south of the new intersection of existing NC 101 and the new roadway, and (c) immediately north of the new intersection of existing NC 101 and the new roadway. See Figure 1 for cul-de-sac locations.
4. Construct a new 2-lane connector from existing NC 101 to the new roadway at approximately 0.2 miles (0.3 km) south of Carteret Memorial Gardens.
5. Construct a new 2-lane connector from the relocated NC 101 to Airport Road.
6. Construct a new 2-lane connector from SR 1169 to existing NC 101 immediately north of the proposed runway extension.
7. Install new traffic signals at the intersections of US 70 with existing NC 101 and with Wellons Drive.

It is estimated that there will be 5 residences and 1 business relocated as a result of this alternate.

The total cost of right-of-way and construction of Alternate 1 is estimated to be \$8,300,000 as follows:

Right-of-way	\$2,400,000
Construction	5,900,000

Total Cost	\$8,300,000

Alternate 2

Alternate 2 is identical to Alternate 1 with the exception of the alignment of the connector from the relocated NC 101 to US 70 which will connect to existing US 70 via Campen Road in lieu of connecting at Wellons Drive. The connector along Campen Road will have a length of approximately 0.5 miles (0.8 km) and will include some construction on new location and the widening of existing Campen Road from a 2-lane shoulder section to a 28-foot (8.5-m) wide, face-to-face, curb-and-gutter section. The easternmost 300 feet (91.5 m) of the section should be widened to three lanes to facilitate turning movements at US 70. The existing traffic signal at US 70 will require upgrading.

It is estimated that there will be 5 residences and 1 business relocated as a result of this alternate.

The total cost of right-of-way and construction of Alternate 2 is estimated to be \$8,100,000 as follows:

Right-of-way	\$2,300,000
Construction	5,800,000

Total Cost	\$8,100,000

Alternate 3

1. Construction, on new location, of a new 5-lane, 68-foot (20.7-m) wide (face-to-face), curb-and-gutter section, with 10-foot (3.0-m) wide berms, from immediately south of Carteret Memorial Gardens, to US 70 at approximately 0.2 miles (0.3 km) northeast of SR 1303. A right-of-way width of 100 feet (30.5 m) is suggested. This roadway segment will have a length of approximately 1.3 miles (2.1 km). A minimum distance of 1,000 feet (305.0 m) should be maintained between the R-3307 and R-3624 intersections with US 70.
2. Construct a new connector from the relocated NC 101 to SR 1212 (Airport Road). The connector should be a 2-lane, 28-foot (8.5-m) wide curb-and-gutter section, with 10-foot (3.0-m) wide berms on a 60 foot (18.3-m) wide right-of-way. This segment of roadway will have a length of approximately 0.7 miles (1.1 km).
3. Construct a 2-lane connector from Bunch Road to Airport Road extension.
4. Construct a new 2-lane connector from existing NC 101 to the new roadway at approximately 0.2 miles (0.3 km) south of Carteret Memorial Gardens.
5. Construct three new cul-de-sacs on existing NC 101 located (a) immediately north and south of the proposed runway extension and (b) immediately south of the new intersection of existing NC 101 and the new roadway. See Figure 1 for cul-de-sac locations.
6. Construct a new 2-lane connector from SR 1169 to existing NC 101 immediately north of the proposed runway extension.
7. Install a new traffic signal at the intersection of the new roadway and US 70.

It is estimated that there will be 6 residences and 1 business relocated as a result of this alternate.

The total cost of right-of-way and construction of Alternate 3 is estimated to be \$6,600,000 as follows:

Right-of-way	\$1,650,000
Construction	4,950,000

Total Cost	\$6,600,000

IV. Other Comments

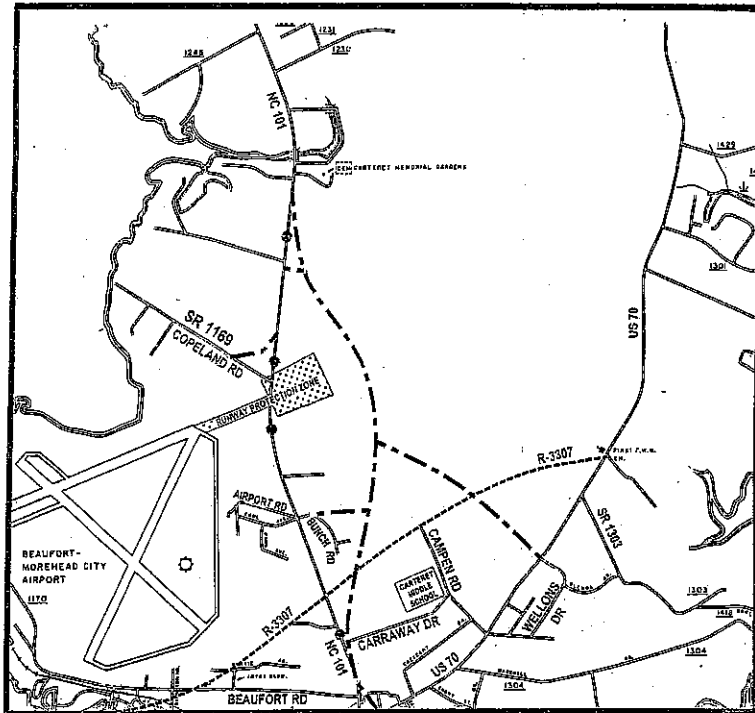
An environmental screening was not conducted for this study; however, there are no apparent streams, drainage structures, or wetlands which should be directly affected by this project.

The Beaufort Historic District is located immediately south of existing US 70. None of the alternatives included in this report should affect the historic district.

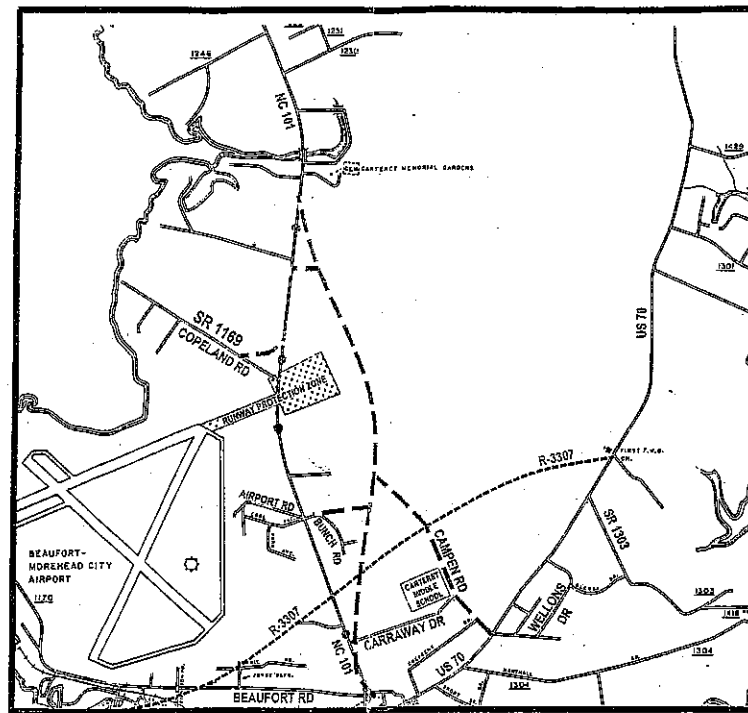
Wide outside lanes are included in the studied alternates to facilitate movement of and safety of bicycle traffic.

Coordination with the FAA is expected to insure no conflict with the glide paths to the Beaufort-Morehead City Airport.

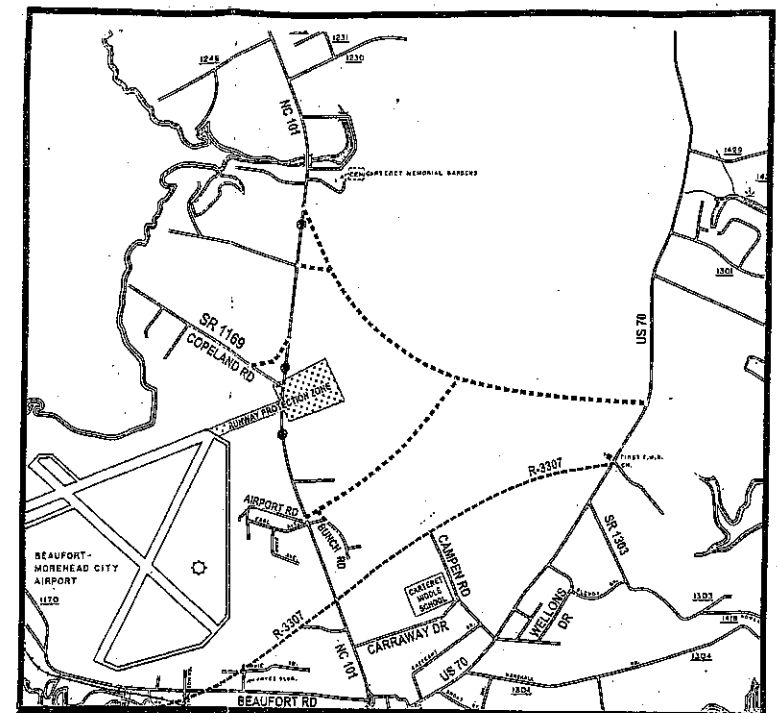
Traffic projections and roadway cross sections, included in this report, are based on the assumption that R-3437 (Newport Connector from US 70 to NC 101) will be constructed. R-3437 is included in the 1996 Transportation Improvement Program as an identified future need. If R-3437 is not constructed, NC 101 should function well as a 2-lane cross section with construction costs being significantly reduced.



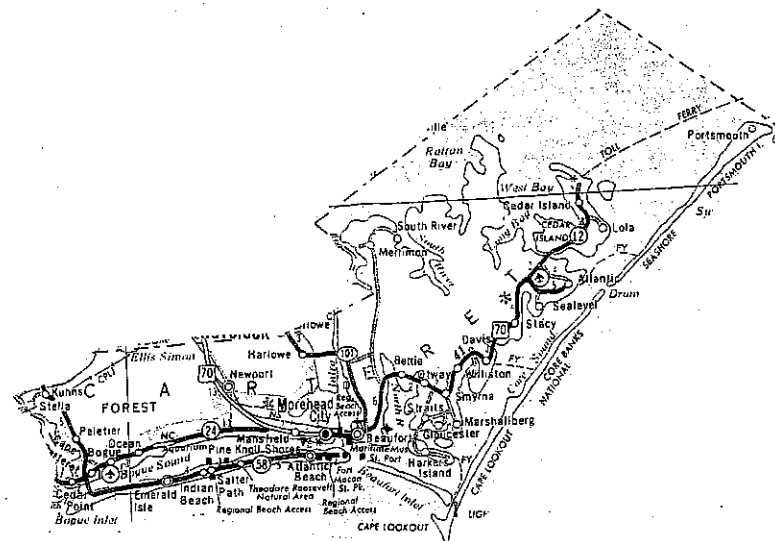
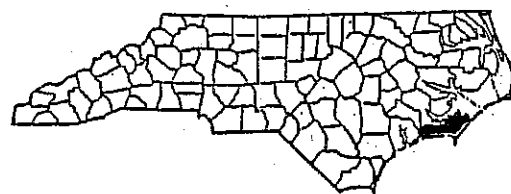
ALTERNATE 1



ALTERNATE 2



ALTERNATE 3



LEGEND	
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---	ALTERNATE 2
---	ALTERNATE 3
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SCALE
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North Carolina Department of Transportation Program Development Branch	
R-3624	
NC 101 NC 101 relocation at Beaufort-Morehead City Airport Carteret County	
DIV. 2	FIGURE 1